Building Performance Improvement Board

2/1/2023

Learn more at https://www.montgomerycountymd.gov/green/energy/beps.html

Agenda

- Administrative items
- Recap actions from previous meeting
- Site EUI target member input (slides: 10 minutes, discussion: 30 minutes)
- Under-resourced building & incentives member input (slides: 5 minutes, discussion: 15 minutes)
- Renewable Energy Allowance overview and background (slides: 30 minutes, discussion: 20 minutes)

Administrative Items

Team Ground Rules

- Full engagement during meetings
- Listen carefully
- Don’t speak while others are speaking or interrupt others
- **Let everyone speak once before you speak twice**
- Follow meeting agendas and respect common ground rules
- Review action items at the conclusion of each meeting
- Value other members’ time (e.g., stick to meeting times and agenda topics, avoid off-topic tangents)
- Assume positive intent
- Maintain an open mind to other perspectives than your own
- Maintain mutual respect for one another
- Engage in respectful conflict
- Critique the idea, not the person
- Don’t take yourself too seriously and enjoy our time together

Actions

- Approve 1/18 meeting notes

Previous Meeting Recap

Action Items

- Members to provide written feedback by 1/27, in advance of the next board meeting on 2/1.
- A member asked to see the site EUI targets in place in other jurisdictions with site EUI target to compare back with the three proposed County target options.
  - Links emailed with EUI target feedback template
    - Denver, deadline 2030: targets
    - St. Louis, first 4-year cycle ends 2025 and will reset after that: targets
    - Washington State, cycle ends 2026 to 2028 and will reset after that: targets
- Board members to include comments on definition of and policy options for Under Resourced Buildings when providing written comments on the targets by Jan 27th.

Site EUI target member input

(slides: 10 minutes, discussion: 30 minutes)

Discussion and Vote

- Review member comments submitted in template.
- Committee members given option to provide brief final comments.
- Vote, by show of hands, for each target.
- Final report will include vote as well as Pros and Cons.

Member Feedback: Technical Feasibility

	EE	EE-ZNC Midpoint	ZNC
PROS	• More practical than other standards • Easy/easiest to achieve (3) • Many buildings should reach by recommissioning to original design. • Major retrofits generally not required unless equipment is at end of life. • Aggressive, but achievable by many buildings that make smart, targeted, and justifiable investments in the technology available over the next decade	• Compromise position, should be the basis • Could be a compromise b/w EE and ZNC • Many existing buildings can meet EE-ZNC midpoint demands within reason. • Most office buildings can meet with minimal expense. • Most appropriate methodology	• Pushes envelope • Meets the intent of the legislation • Opportunity to commercialize and therefore drive down price on ZNC buildings • Achievable with existing technology. BPIP and REA can be used to offset challenges from a disconnect between feasibility on paper and that in the real world. • Buildings currently under construction & electrified existing buildings already come close to meeting demands.
CONS	• Doesn't move the ball very far. Soon obsolete. • Does not push efficiency far enough • Does not push building owners to electrify - most building owners will replace gas boilers with more efficient gas boilers versus heat pumps and/or heat recovery equipment. • Arguably not asking building owners to do enough.	• Does not do enough to curb climate change and is too far from Net Zero Energy EUI targets. • This target is seemingly made up based on the midpoint of ZNC (not technically feasible for certain building types like MF) and EE (still aggressive, but more technically achievable) • Some building types begin to require upgrades to base-building in conjunction with operational improvements, which would present a challenge for some owners. • More difficult for older multi-family.	• Often will be difficult or impossible • Could be costly however there is a pathway via BPIP • 'Technical feasibility' makes assumptions about the most efficient systems possible, while realities for many building owners make this target not feasible. • Requires more engineering design, resulting in more expense and potentially more risk if design is complex • For buildings with a large amount of natural gas heating, electrification retrofits often have very high up-front cost & ROI • Building owners may want/need to wait to convert as heat pump technology progresses. • Very aggressive for existing building owners • Difficult for older multi-family. May require HVAC, hot water and cooking system redesign. Electric infrastructure upgrade.

Member Feedback: Economic Feasibility

	EE	EE-ZNC Midpoint	ZNC
PROS	• Most affordable/cost effective (4) • BPIP offers an alternative pathway to compliance • Is based on EE, pushes strongly towards electrification, is much more justifiable in terms of both upfront project costs and operating expense reductions than the others. • Lower utility / operating costs for all. Most EE projects have a good ROI.	• A good compromise • BPIP offers an alternative pathway to compliance • Most building owners can meet this without breaking the bank. • Incentives available for energy efficiency • Most appropriate methodology	• Suitable for new builds • BPIP offers an alternative pathway to compliance • Best for building owner - improved asset value, healthier for building occupants. If HVAC equipment replaced then building is more reliable, comfortable, efficient. With proper design (i.e. recover/move heat vs. create heat), utility bills should be lower. Depending on retrofit plan, total cost of ownership should go down. • Feasible for most buildings as there are many incentives available, with potentially an increase of options with likelihood that the new regulations for EmPOWER will support fuel switching. • Will be easier for building owners to apply for certifications such as passive house or net zero, which are getting incentivized by county.
CONS	• Not enough of a stretch • Does not do enough to curb climate change, too far from net-zero energy • Arguably not asking building owners to do enough. • Some buildings will have to spend money to hit this target. Building owners may want to get rid of buildings versus improving them, causing asset values in the County to lower, more vacancies. Rents may raise, adversely affecting low- income residents. People may want to move out of the County because of it. • Very poor feasibility for long term planning.	• May make keeping buildings economically infeasible • Not do enough to curb climate change, too far from net-zero energy • This target is seemingly made up based on the midpoint of ZNC (not financially feasible for certain building types like MF) and EE (still aggressive, but more financially justified) • Not as expensive as ZNC but still a big expense.	• May make keeping building economically infeasible • Not do enough to curb climate change, too far from net-zero energy • Such high upfront costs that many owners would accept the penalties rather than invest in improvements. They may be forced to reposition or abandon their buildings in a way that raises rents, reduces the housing stock. • Neither of strictest options will reduce GHG emissions as much as an achievable target, with adequate funding & fair compliance pathway • It can be extremely expensive up front to retrofit a building that uses a significant amount of gas esp if electrical capacity must be added • Buildings with a very high site EUI baseline may find it challenging to meet • Most building owners will need financial aid. • May be cost prohibitive. Elec may not be an option for everyone

Member Feedback: Alignment with State/County Goals

	EE	EE-ZNC Midpoint	ZNC
PROS	• County becomes much more EE. • Meets BEPS law language. • Much more likely to actually result in large-scale county-wide savings and electrification that aligns with State goals. • This goal **is** a pathway to meeting the State goals.	• Does it go far enough? • While this is an arbitrary number, does somewhat align with the state goal. • Most appropriate methodology	• Good alignment with energy goals • County must at minimum align with the state. The intent of the legislation was to push buildings to become more efficient. The emerging building code, Green Code, and State Carbon legislation will support achieving BEPS. • Aligns with State & county goals. If we do NOT do ZNC we are setting our building owners up for failure and additional cost down the road. • Best aligned with both county and state goals for GHG, and should come very close to meeting those targets, though with some caveats
CONS	• Doesn't get to overall goal • No alignment with state or county goals. • Does not align with State goals. This is a disservice to building owners. • Equity issue for LMI households in developing a county policy that encourages continued use of fossil gas given efficiency of HPs and utility rate forecasts.	• Does it go far enough?	• Does it advance other County goals, e.g. economic development, affordable housing? • State goals in draft form are not progressive enough to affect the change needed to curb climate impact. • Potential for buildings to hit this stringent target while still have some onsite combustion of fossil gas • Far too aggressive for many buildings, (especially MF) who will either take the penalties or be forced to re-position the building, which could exacerbate the affordable housing shortage in MD. ZNC is therefore putting an aggressive burden on landlords and renters within the County

Member Feedback: Building Types

Multifamily

- A few members suggested an EE target for MF, even if other groups get ZNC or mid-point.

Religious Worship

- One member suggested an EE target for houses of worship given the range of buildings used for worship, even if other groups get ZNC or mid-point.

County-Owned Building Types

- One member suggested ZNC for County-owned buildings like Courthouses, Prison/Incarceration, Public Order and Safety, Recreation even if other groups get EE or mid-point

Laboratory, Manufacturing/Industrial

- One member suggested that these building types be handled on a case-by-case basis rather than having a set EUI target for the group

Discussion and Vote

- Committee members given option to provide brief final comments.
- Vote, by show of hands, for each target.
- Final report will include vote as well as Pros and Cons.

Under-resourced building member input

(slides: 5 minutes, discussion: 15 minutes)

Under Resourced Buildings

The Law says:

- The Department may establish additional criteria recommended by the Building Performance Improvement Board for qualified affordable housing, non-profit buildings, and other buildings as appropriate to modify compliance with interim or final performance standards by regulation.

Regulation Goals:

- Outline which other building types, if any, are appropriate to be considered under-resourced buildings
- Outline extensions, adjustments, alternative compliance paths, or other compliance modifications for under-resourced buildings
- Focus on *policy* levers rather than financial or technical support measures for these groups
  - Timeline adjustments
  - Target adjustments
  - Compliance paths

Member Feedback: Under Resourced Buildings

Other building types, if any, that are appropriate to be considered under-resourced buildings?	Extensions, adjustments, alternative compliance paths, or other compliance modifications for under-resourced buildings?	Other Comments:
• Owner occupied and nonprofits should all be considered as under resourced in comparison to actual commercial buildings. • Capture the properties where resource constraints pose a real trade-off between efficiency and affordability • Other non-residential buildings where the NOI Margin is low, which makes major improvements very challenging to envision or finance without abandonment, so one or more clear metrics for what qualifies as an under-resourced building would assist the BPIB and DEP in serving that group. • Current definition is adequate	• More generous extension and adjustment allowances • I think their timeline should remain the same	• Equity is a critical concern for multifamily targets

Member Feedback: Incentives

- Plenty of technical assistance
- Something like the DC Affordable Housing Retrofit Accelerator
- Have fees feed back into supporting upgrades
- Law to get condo owners/individually metered to comply
- BPIP should include modification based on capital cycle
- Building owner representative services that provide project management, help securing bids, technical support, and vendor coordination, perhaps sited at Greenbank
- Targeted electrification pilots for buildings that are hard to electrify
- Green Bank could offer loans and the savings be the payback, so it is no cost to the building owner.
- Suite of prescriptive incentive options to decarbonize in a modular fashion w/step-up in generosity for under-resourced buildings
- County to create some sort of property tax on single family homeowners to fund multifamily upgrades?

Discussion

- Brief final comments?

Renewable Energy Allowance overview and background (slides: 30 minutes, discussion: 20 minutes)

Regulations: Renewable Energy Allowance

The Law says:

account for the renewable energy allowance in the performance metric

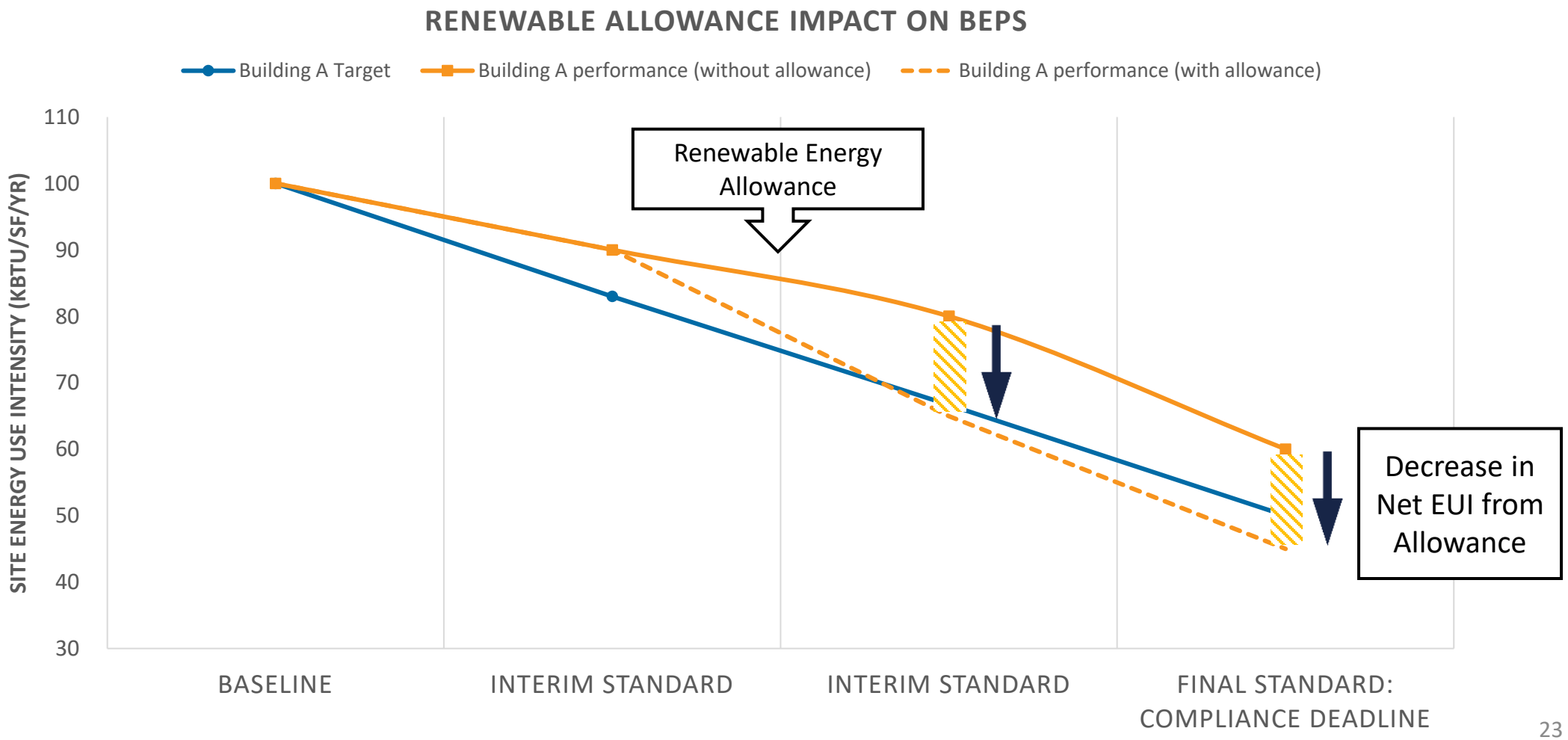
Normalized net site energy means the site energy use by the covered building normalized for weather and other characteristics within the limits of the capabilities of the benchmarking tool and normalized for other factors as determined by the Department minus energy generated from the renewable energy allowance.

Regulation Purpose:

- Define a “renewable energy allowance” that is accounted for in the performance metric
- Outline types of renewable energy and ownership structures that are allowed to be counted towards BEPS compliance
- Recommend allowance calculation factors based on renewable energy attributes

Potential Renewable Energy Allowance (REA)

Normalized Net Site EUI = (Weather-Normalized Site Energy Use – Reduction from REA)/gross square feet



Background on Renewable Energy Allowance (REA)

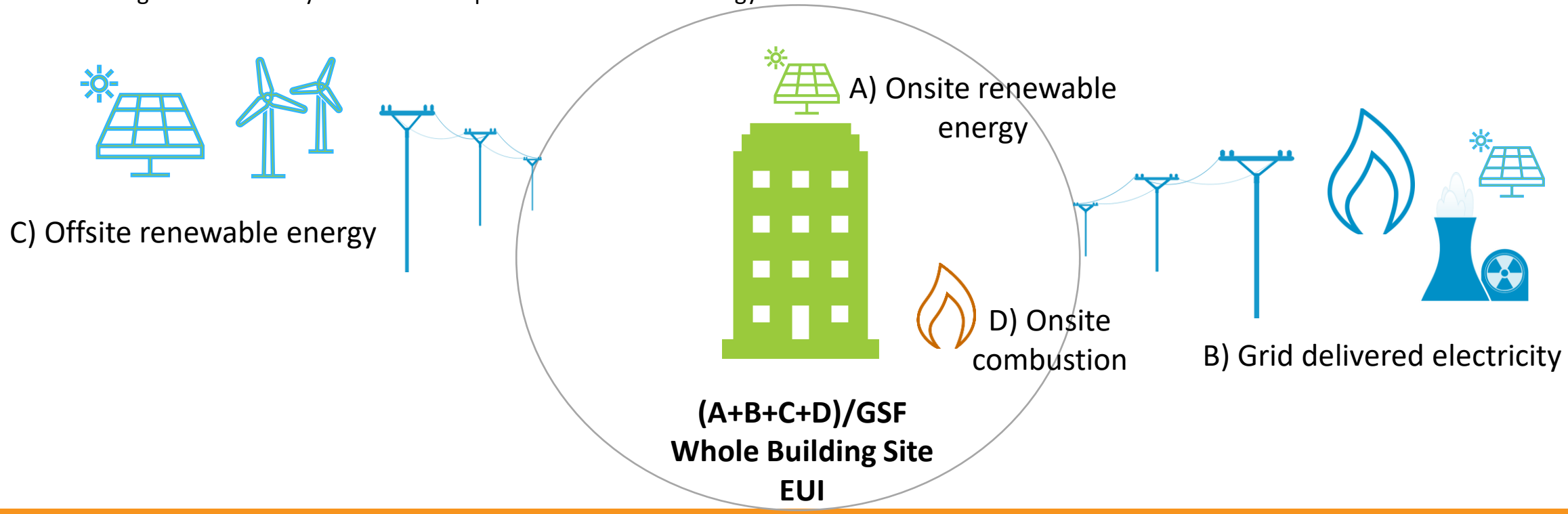
- Original performance metric definition sought to credit onsite solar
- Performance metric definition changed in T&E committee to provide “renewable energy allowance”
    - Opens the door to provide an allowance for other (non-solar) renewable resources and those generated offsite
- There are no right or wrong answers and very few models for how to provide the REA (and in fact EPA advises against using net energy metrics).
- Preferred REA may change based on policy objectives:
    - Encourage energy efficiency
    - Accelerate local RE economy
    - Provide grid benefits
    - Maximize carbon reduction
    - Ease implementation (County) and submission process (building owner) + align with reporting tools
    - Align with building codes

Renewable Energy Basics

Renewable energy can be produced onsite (A: onsite renewable energy)

Any onsite production is typically supplemented with either B: grid delivered electricity, and/or C: offsite renewable energy

- Offsite renewable energy can be procured in various ways
- Renewable energy credits (RECs) are certificates that transfer the “renewable” aspects of renewable energy to the owner. One REC is generated for every one MWh (1,000 kWh) of renewable energy produced.
- RECs generated from onsite production can either be retained, sold, or “arbitraged.”
- Building owners can buy offsite RECs to purchase renewable energy.



Renewable Energy Allowances in Other Jurisdictions

Jurisdiction	BEPS Metric	Renewable Energy Allowance
City and County of Denver, CO	Weather-normalized site EUI (see 3.5 Renewable Credit)	Solar and wind; regardless of REC retention; onsite & long-term contracts (>5 years) fully credited; short-term contracts limited to up to 20% of the building's electricity usage and dropping to 0 credit by 2030)
City of St. Louis, MO	Weather-normalized site EUI	No allowance
State of Washington	Weather-normalized net site EUI (building net energy calc on p. 10)	Onsite allowance, regardless of REC retention (just requires "net" energy to be reported
Washington D.C.	ENERGY STAR score	No Allowance or equivalent for renewable energy (ENERGY STAR score reflects some benefits of onsite RE in lower source EUI/higher ES score)

Renewable Energy Allowance Technical Report

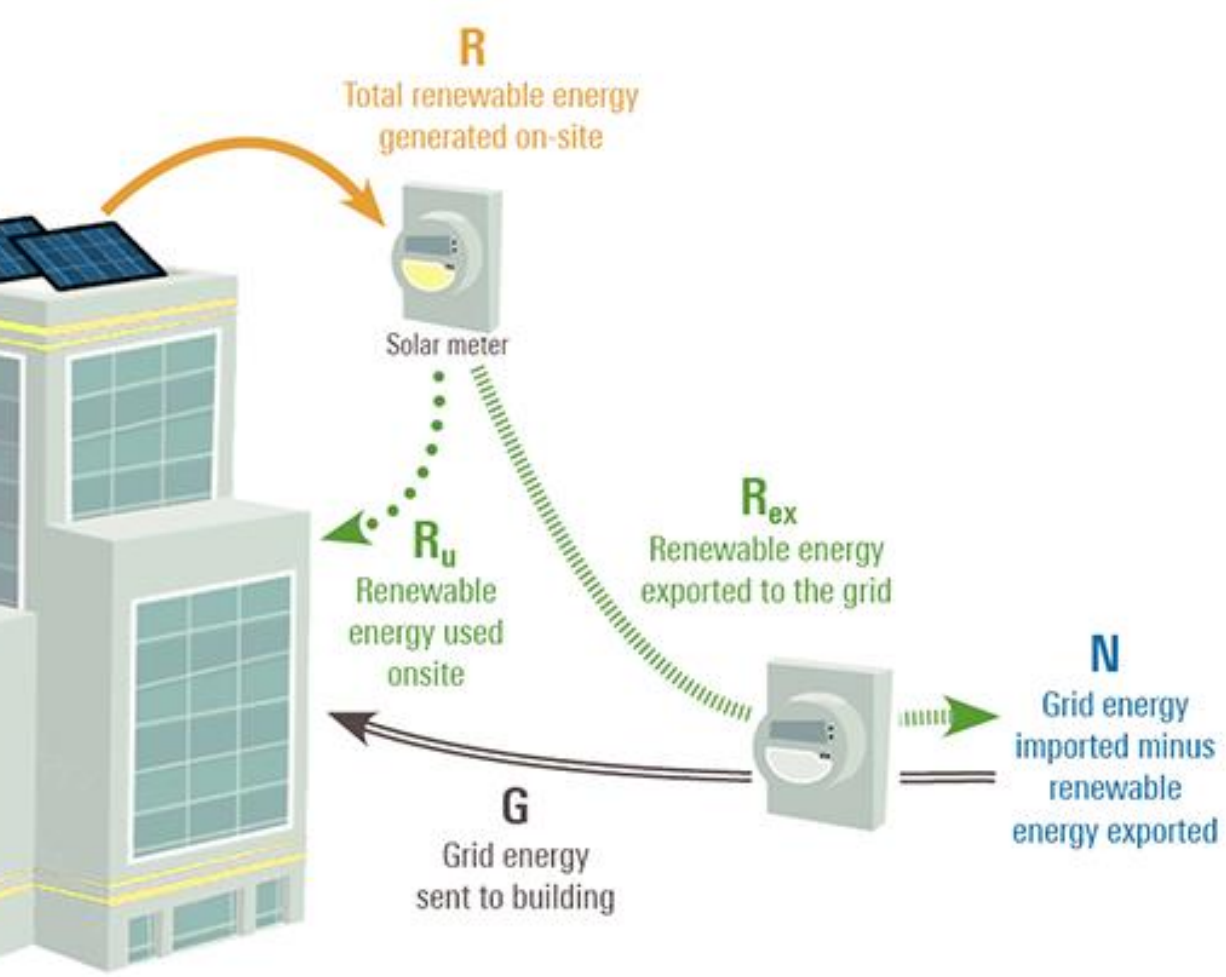
- DEP contracted ICF to engage stakeholders and outline technical considerations in the BEPS Allowance for Renewable Energy Technical Report and Recommendations
- In providing a renewable energy allowance, a few key considerations:
  - How to credit onsite renewable energy
  - Whether offsite renewable energy procurement will be considered
  - What renewable energy sources are eligible for an allowance
  - Where the renewable energy is generated
  - How the energy is being procured
  - The relative weighting, if any, of the above characteristics in calculating the REA

Policy Objectives: General Stakeholder Consensus

- BEPS, at its core, is about **building energy performance**: BEPS policies and regulations should incent building energy efficiency improvements irrespective of the renewable energy allowance
- The REA should encourage **more renewables within the County** to promote local environmental, economic, and electric grid benefits: the further away a renewable project is from the County, the less local impact it delivers
- REA compliance requirements should be as **simple** as feasible (for building owners and for County administrators)
- To help achieve equitable outcomes and mitigate unintended inequitable consequences, the County should provide **additional support for under-resourced buildings**

Onsite Renewable Energy Considerations

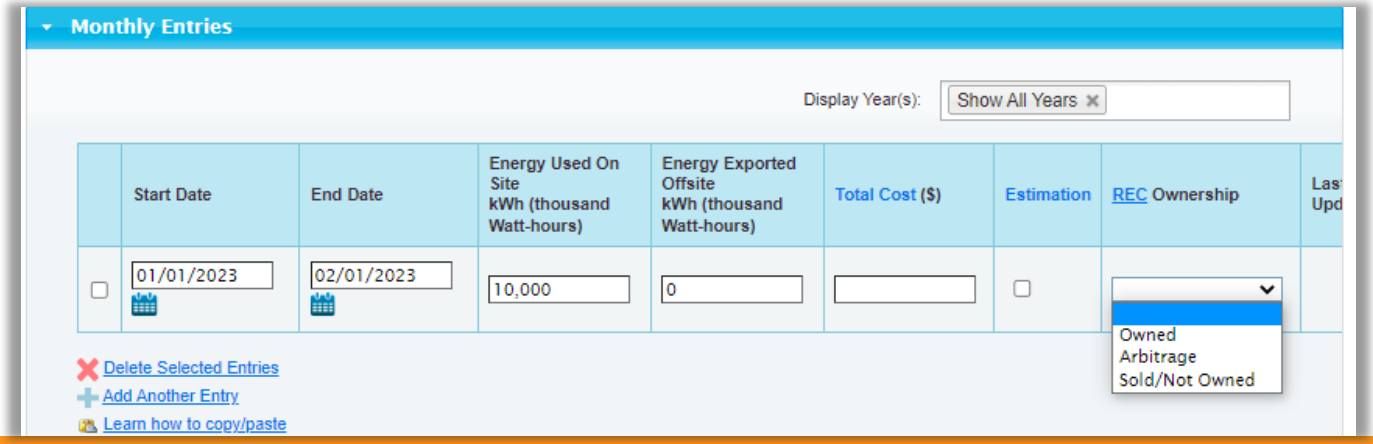
Onsite RE Tracking in ENERGY STAR Portfolio Manager



Description	Label	Data Sources	ESPM Metric Name (all values in kWh)
Total renewable energy generated onsite	R	PPA Invoices or Onsite metering	Electricity Use – Generated from Onsite Renewable Systems
Grid energy sent to building	G	Utility Invoices	Electricity Use - Grid Purchase
Renewable energy exported to the grid	Rex	Some Utility Invoices or unavailable	Electricity Use – Generated from Onsite Renewable Systems and Exported
Renewable energy used onsite	Ru	Calculated from PPA invoices or onsite metering AND Utility invoices	Electricity Use – Generated from Onsite Renewable Systems and Used Onsite
Grid energy imported minus renewable energy exported	N	Provided by or calculated from Utility invoices	N/A
Total site electricity	Ru + G	Calculated from PPA invoices or onsite metering AND Utility invoices	Electricity Use - Grid Purchase and Generated from Onsite Renewable Systems

Onsite REC Tracking in ENERGY STAR Portfolio Manager

- Users can track whether they own, arbitrage, or sell/do not own RECs generated from onsite generation
  - Arbitrage = Hosts of onsite renewable energy projects who do not retain ownership of their projects' RECs may purchase offsite RECs contemporaneously in time and in the same quantities as the RECs generated by the onsite project (usually because they're cheaper).
- Benchmarking reports show one metric on RECs: **Percent of RECs Retained**
  - The percentage of Renewable Energy Certificates (RECs) that you kept/(own) compared to the total quantity of RECs associated with the onsite renewable energy you generated. It does not include RECs that you traded in REC Arbitrage.
- Pepco bills alone do not contain all the information necessary to properly benchmark onsite renewable energy use.
  - Bills only show the net electricity – grid energy minus renewable use
  - Reporters would need to refer to solar production data to see how much renewable energy was used on site
  - Example: grid delivered elec is 0, exported elec is 31,040, solar used onsite must be calculated by solar production – solar exported



Meter Number Energy Type	Current Reading Mar 22	Previous Reading Feb 17	Difference	Multiplier	Total Use
On-Peak Use (kWh)	999831 (actual)	999940 (actual)	109	160	–17440
Int-Peak Use (kWh)	999888 (actual)	999949 (actual)	61	160	–9760
Off-Peak Use (kWh)	000288 (actual)	000312 (actual)	24	160	–3840
On-Peak Demand (kW)	0.390 (actual)			160	62.40
Int-Peak Demand (kW)	0.380 (actual)			160	60.80
Off-Peak Demand (kW)	0.370 (actual)			160	59.20
Total use-kWh					–31040

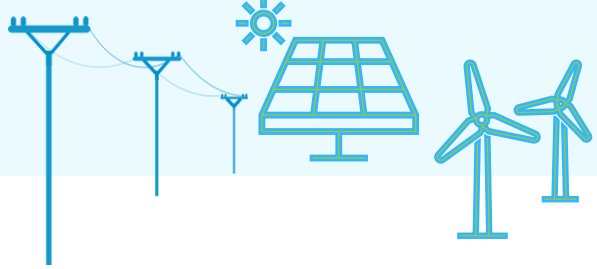
Options and Decision Points: Onsite Renewables

Nuances to crediting onsite renewable use.

1. Should onsite renewable energy be considered as part of the REA?
   - *Yes*
   - *No*
2. If yes, should owners get credit for renewable energy *produced (R)* or *consumed (Ru)?*
   - *Option 1 (stakeholder consensus):* All onsite electricity generated will receive allowance, including exported power
   - *Option 2:* Owner gets credit only for renewable energy used onsite **(EPA feels that exported energy should never be factored into a building's energy consumption)**
3. Do owners need to retain RECs to get a REA?
   - *Option 1 (stakeholder consensus):* Allowance should apply even if onsite RECs are sold or transferred.
   - *Option 2:* Owner must retain RECs to take credit
   - *Option 3:* Some building types (affordable housing, non-profit owners) may count onsite energy regardless of REC retention, while others must retain RECs for credit

Offsite Renewable Energy Considerations

Offsite Renewable Energy: Characteristics of RECs

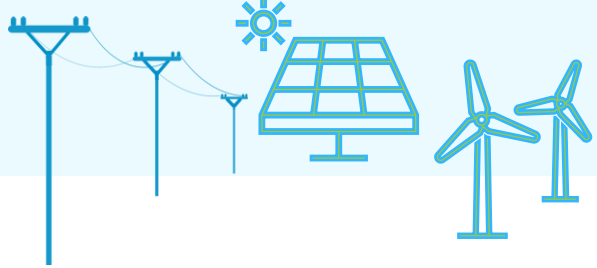


Resources/Technologies

- Many renewable energy sources can be considered eligible to create RECs.
- In Maryland, the RPS includes:
  - solar (photovoltaic and solar water heating),
  - wind,
  - qualifying biomass,
  - methane from a landfill or wastewater treatment plant,
  - geothermal power,
  - certain geothermal heating and cooling systems, ocean,
  - fuel cells that produces electricity from a Tier 1 source,
  - hydroelectric power plants less than 30 megawatts (“MW”) in capacity,
  - poultry litter-to-energy, waste-to-energy,
  - refuse–derived fuel,
  - and energy from a thermal biomass system.
- County needs to determine what resources/technologies qualify for REA

Maryland’s Renewable Portfolio Standard (RPS) Program requires gradual increase in the amount of renewable energy electricity suppliers must procure from renewable sources to reach 50% by 2030

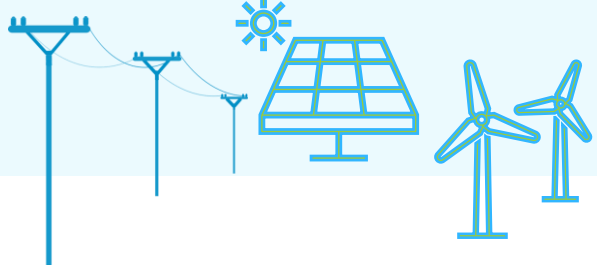
Offsite Renewable Energy: Characteristics of RECs



Locations

- RECs can be obtained from anywhere in the country (e.g. wind farm in Iowa).
- Many policies (e.g., RPS) place narrower geographic boundaries (e.g., in the same electricity market or state) on what RECs will count towards policy achievement.
- The County will need to determine what, if any, limits to place on the location of the projects creating RECs that are eligible for the REA

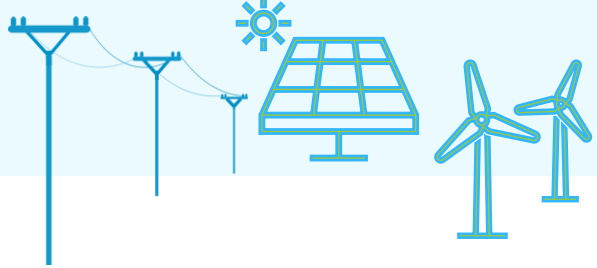
Offsite Renewable Energy: Characteristics of RECs



Vintages and Eligibility Periods

- Because RECs are an accounting instrument, not a physical unit of energy, they can be stored indefinitely in principle. There are two dimensions – when the renewable energy project was commissioned and when the individual RECs under consideration were created.
- The County will need to determine if projects built before a certain year will receive a REA and for how long RECs will be eligible to receive an REA after they are created.

Offsite Renewable Energy: Characteristics of RECs

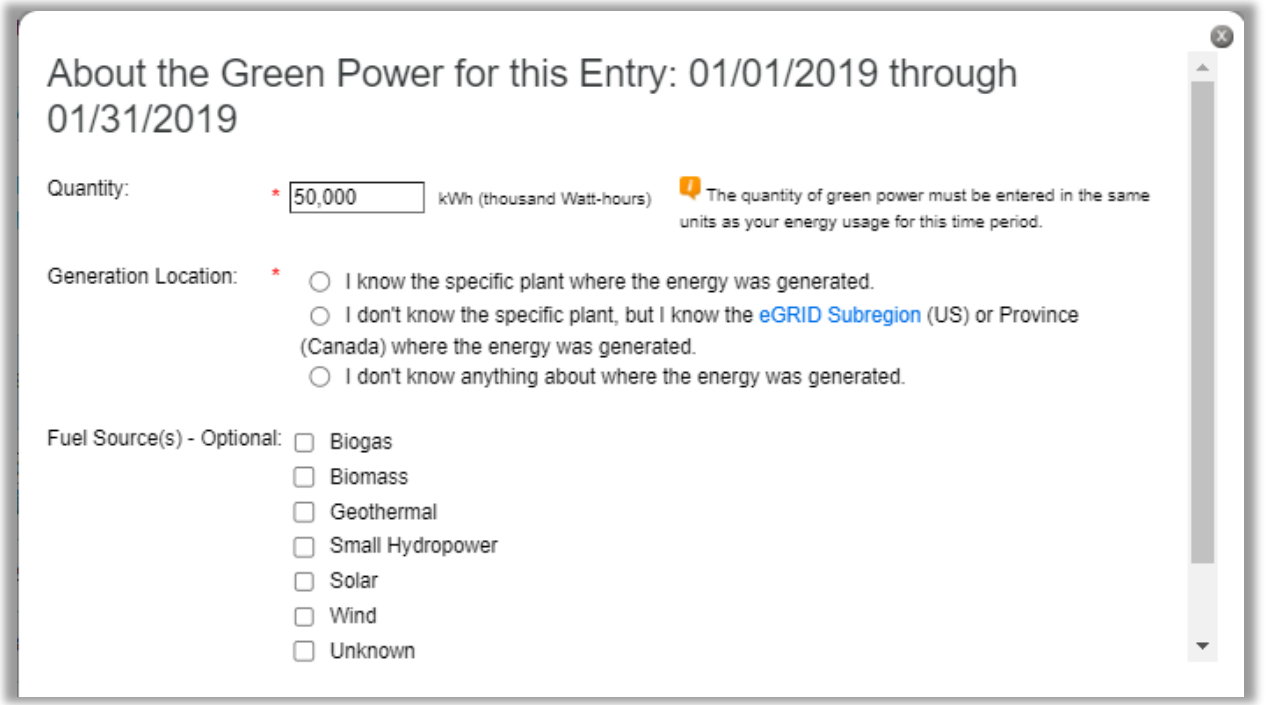


Contract Type/Terms

- RECs can be procured in many ways. The contract type and duration can influence the type of benefits being conveyed.
- County needs to determine what kind of contract types and durations are eligible for REA

Offsite REC Tracking in ENERGY STAR Portfolio Manager

- Users can track the purchase and consumption of offsite renewable energy, including bundled green power products and unbundled renewable energy certificates (RECs)
  - Users **cannot** enter detailed information about the contract type, duration, etc.
  - DEP **cannot** see information about generation location or fuel sources in reported benchmarking data, just Green Power Offsite (kWh)
  - **If offsite RECs are counted, need for additional reporting/tracking outside of ESPM**



Options and Decision Points: Offsite Renewables

- **Question 1 is whether offsite renewables should be considered in the REA**
- Stakeholders generally agreed on providing some REA value to offsite renewables on a sliding scale for:
  - Location of renewable energy source closer to County
  - More stable/reliable contract terms

Pros to Crediting Offsite Renewable Energy	Cons to Allowing Offsite Renewable Energy
Provides building owners with significant flexibility in complying with BEPS	May allow owners to bypass energy efficiency and still comply with a BPS while building is highly inefficient and wasting large amounts of energy
Council signaled desire to credit additional sources by amending original bill	Tracking and calculation of offsite RE not available in ENERGY STAR Portfolio Manager. Requires more effort for County to track, verify, and calculate allowance for offsite purchases
May prompt more owners to procure renewable energy with associated carbon benefits	Requires more effort for building owners to document and report purchases
Most stakeholders (especially building owners/managers) generally in favor of offsite REA	Generally, makes compliance and use of EUI metric more complicated to understand
Allowance for buildings whose site configuration does not allow for significant onsite RE	Lower-resourced building owners may not have the means to purchase offsite green power (where there are no incentives or payback like for efficiency projects)

Offsite Renewables: Eligible Sources

IF offsite renewables are allowed, what sources are eligible for credit?

- No stakeholder consensus was found.
  - *Option 1:* All Maryland RPS Tier one sources count as qualified renewable energy sources (includes solar, wind, qualifying biomass, methane from a landfill or wastewater treatment plant, poultry litter-to-energy, waste-to-energy, and refuse–derived fuel)
  - *Option 2:* Alignment with Maryland's RPS Tier 1 sources, with exclusions (e.g., for combustion technologies)
  - *Option 3:* County-developed list of qualified renewable energy sources (e.g., only solar and wind)

- Should renewable natural gas be credited?
  - Replacement of direct fossil fuel use in buildings with decarbonized gases, such as renewable natural gas (“RNG”) - use of RNG as a step-down approach to decarbonization.
  - If yes, may require additional considerations on reporting

Offsite Renewables: Locational Boundaries

IF offsite renewables are allowed, should location of the offsite generation matter?

- Stakeholder consensus that offsite be given a lower allowance than onsite
- Strong consensus that offsite projects closer to the County or integrated in closer contact to the County's electrical grid infrastructure be given a higher allowance than projects further away or in other grid systems
  - *Option 1*: Fixed location factor for any offsite renewable energy to discount it relative to onsite generation (e.g., offsite REC * 0.5 for half credit)
  - *Option 2*: Provide two-tiered location factor - least favorable location = within PJM, most favorable location factor = within Maryland (e.g., within PJM = 0.5 factor, within MD = 0.75 factor)
    - *Using a location factor for the County or its electric utility boundaries could create additional administrative burden since some RECs may not have that level of locational granularity easily accessible.*
  - *Option 3:* Provide three-tiered location factor – outside PJM, within PJM, within MD (e.g. outside PJM = 0.25 factor, within PJM = 0.5 factor, within MD = 0.75 factor)

Offsite Renewables: Transaction Types

IF offsite renewables are allowed, should transaction type and duration (contract length) matter?

- Strong consensus that some procurement types be allotted a higher allowance than others. Multiyear power purchase agreements and community solar commitments > unbundled RECs.
- Provide a set of "procurement factors" to serve as a discount to the allowance provided to different types of RECs
  - *Option 1*: Provide a custom set of tiered procurement factors to RECs based on the length of the agreement and the type of transaction proximity to the County or integration into the County's electrical grid infrastructure.
  - *Option 2*: Align the procurement factors with existing 2021 International Energy Conservation Code's Zero Energy Commercial Building Provision Procurement Factors while also choosing to not include a Location Factor, aligning County policy with code.

Table 3 Overview of 2021 International Energy Conservation Code's Procurement Factors[10]

Class	Procurement Factor (PF)	Procurement Options	Additional Requirements (see also Section CC103.3.2)
1	0.75	Community Solar, REIFs, Virtual PPAs and Self-owned off-site	Various depending on option selected
2	0.55	Green retail tariffs & Direct Access	The offering shall not include the purchase of unbundled RECs
3	0.20	Unbundled RECs	The vintage of the RECs shall align with the building energy use

Discussion

Next Steps

- Continue Renewable Energy Allowance discussion
- Building Performance Improvement Plans
  - Need to determine criteria under which a BPIP will be allowed – “financial infeasibility” and circumstances outside of an owner’s control
  - Need to determine implementation requirements – “cost effective” measures

Helpful Links

- Benchmarking and Performance Standards Law
- Benchmarking Website
- BEPS Website
- Building Performance Improvement Board Website (will include agendas, notes, and presentations)
- BEPS Stakeholder workgroup + report – completed before bill was introduced to gather stakeholder input on BEPS policy elements
- BEPS Technical Report – outlines options for site EUI targets by building type group and assesses feasibility and costs in representative case study buildings
    - Presentation of BEPS Technical Report to Council Transportation & Environment Committee
- Allowance for Renewable Energy Technical Report and Recommendations - provides information on determining how a renewable energy allowance should be defined and implemented within BEPS regulations
- On weather and business normalization:
    - EPA technical reference guide on weather normalized energy use
    - EPA's Recommended Metrics and Normalization Methods for Use in State and Local Building Performance Standards document

Helpful Links (continued)

- Maryland Clean Energy Center 10/25 Webinar, Solutions to Achieve Building Energy Performance Standards recording
- Maryland Department of Environment BEPS page

Questions?

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https://www.montgomerycountymd.gov/green/energy/bpib.html

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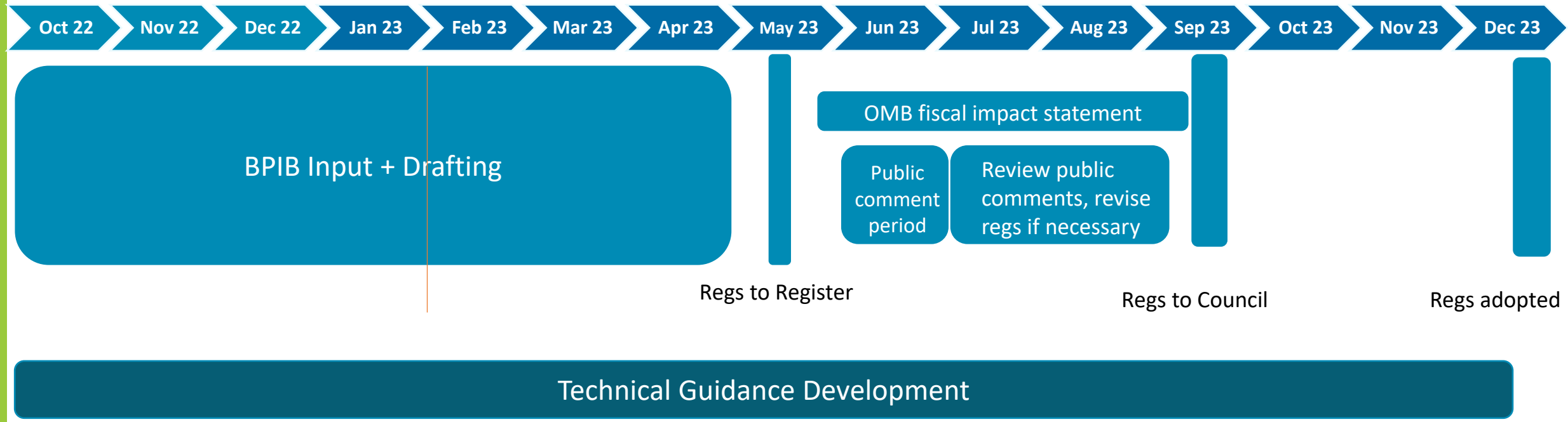
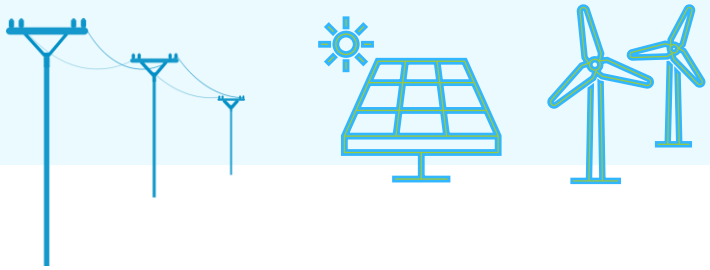
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Regulation Development

- Board provides recommendations
- DEP drafts regulations in consultation with Office of County Executive
- Public comment period
- County Council deliberation – 60 days, vote up or down, with comments back to CE
- If not adopted, back through public comment period and revote

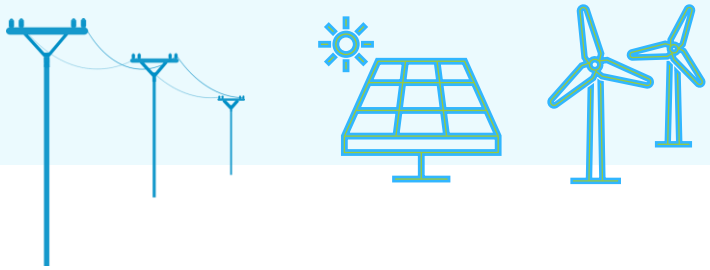


Offsite Renewable Energy: Contract Types



- **Grid delivered electricity**
  - Maryland's RPS requires that electricity generation suppliers include specified percentages of renewable electricity (accounted for with RECs) in their supply to end-use customers in the State. All end-users essentially have RPS percentages of RECs (minus minor, possible ACP-related shortfalls) embedded in their traditional generation supply transactions, the County does not expect that these RPS-related RECs will count towards the REA
- **Bundled Renewable Supply Agreements from Electric Suppliers**
  - Because Maryland has a deregulated electric generation market, customers can choose to obtain their supply from any licensed electric supplier in the State. Customer can contract for electricity with renewable energy content (as represented by RECs) with any level of RECs between the RPS minimum for a given year and 100% renewables.
  - The County will need to consider the percentage renewable energy, the location of renewable energy generation, the technology and the duration of supply agreements.
  - For bundled agreements, location of REC generation, generation technology, and REC vintage of bundled RECs are sometimes unknown to the customer
- **Community Choice Energy (CCE)**
  - Montgomery County, pursuant to Maryland House Bill 768 passed in April 2021, will have an opportunity to establish a Community Choice Energy (CCE) pilot program to take effect no earlier than April 2023. CCE program could mandate minimum levels of renewable energy that exceed the State RPS.
  - As a principle, CCE transactions should probably be treated no differently than comparable competitive electric supplier transactions.

Offsite Renewable Energy: Contract Types



- **Aggregate Net Energy Metering**
  - Apply onsite physical electricity from projects produced in excess of onsite requirements to consumption at other, offsite meter(s) owned by the same customer.
  - If/how will a building owner be allowed to allocate RECs it retains from an offsite project to other building(s) it owns in the County?
- **Power Purchase Agreements or Virtual Power Purchase Agreements (PPA / VPPA)**
  - Some building owners, especially in large organizations, sign long-term (up to 30-year) PPAs with specific solar or wind projects located offsite. When there is no physical delivery of electricity from the renewable project to the building owner, these transactions are often structured as virtual PPAs (VPPAs).
- **Community Solar**
  - Type of unit-specific, offsite renewable energy transaction. The community solar generator determines if and how the SRECs associated with the project are conveyed to individual subscribers.
  - Individual project capacity is limited (to 2 MW), they may not require any long-term (multi-year) commitment from the buyer, and the projects must be located in the utility's service territory.
  - Those differences may or may not be pertinent to the County as it establishes REA rules.
- **Unbundled RECs**
  - Unbundled REC transactions are conveyed in contracts without associated physical electricity supply. Many organizations sell unbundled RECs – they do not need to be licensed physical electricity suppliers or Maryland community solar subscriber organizations. The minimum duration for any REC contract is typically one year, with no maximum duration.